

DP-309186

**A MODIFIED HIGH EFFICIENCY KINETIC SPRAY NOZZLE**

ABSTRACT OF THE DISCLOSURE

A modified high efficiency kinetic spray nozzle is disclosed. The modified nozzle has a rapid expansion rate in the diverging region relative to prior art nozzles, which enables one to achieve much higher particle velocities without an increase in the main gas temperature. Preferably, the expansion rate of the supersonic nozzle in a portion of the diverging region is at least  $1 \text{ mm}^2$  per millimeter, more preferably  $2 \text{ mm}^2$  per millimeter, more preferably  $5 \text{ mm}^2$  per mm, with a most preferable expansion rate being  $10 \text{ mm}^2$  per millimeter.